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Processes for Obtaining Quality Silk Raw Materials From Industrial Silkworm Cocoons

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Annotation: *One of the important tasks in increasing the production of silk fabrics in our country is to preserve the technological properties of cocoons, the main raw material of the industry, to improve the technology of their primary processing to obtain raw silk in accordance with world standards. Therefore, any scientific research in this area has its own important relevance.*

Keywords: *mulberry silkworm, silk fibers, cocoon, raw silk, natural silk, mulberry leaf, natural silk products.*

Introduction: Further development of silkworm breeding, meeting the growing demand of the population for silk clothes and full supply of the market with goods made of natural silk, increasing the production of abundant and high-quality cocoons and silk fibers will further strengthen economic ties with foreign countries and increase exports of finished products. attention is paid.

In our country, natural silk fibers are obtained only from the cocoons of mulberry silkworms. The quality of natural silk and all its technological properties depend not only on the breed of silkworm, care agrotechnics, leaf saturation, the quality of the stalk, but also on the initial processing regimes of the cocoon.

The cocoons of the cocoons received from the suppliers on the basis of the initial processing of cocoons must be killed on the same day, within two days from the date of receipt of the cocoons brought to the preparation points. Brack and black cocoons must be thoroughly dried, even in box dryers. During the initial processing of cocoons, it is very important to maintain the physical and mechanical properties of the cocoon yarn, as well as the characteristics of living cocoons, and the silk from the cocoon is based on them.

Valuable, durable fabrics are woven from natural silk, which is widely used in aviation, aerospace, medicine, radio engineering and other fields. Therefore, great attention is paid to the further development of silkworm breeding in the Republic.

The productivity of silkworms is significantly affected by the ambient temperature, along with the processing of cocoons. In the experiment, the productivity of late-fed worms was 1.2-7.8% of the average weight of the cocoon, 1-1.6% of the average weight of the silk shell, and 2-4.2% of the silkworm cocoon. decrease was observed. The most important period of silkworms, ie the growth and development of 5-year-old worms, in the last ten days of May, when the air temperature rose to + 30-35 degrees and the mulberry leaves became much stiffer, the main signs of productivity decline are extremely late.

Main part: The cocoon mills operate year-round. The silkworms of last year's cocoons will continue until the cocoons grown next year arrive. Mushrooms are killed to prevent butterflies from coming out of the cocoon. But this alone is not enough to keep the cocoon of good quality for a long time. Mushrooms contain 70% water in the body. The cocoon in which the fungus is killed is stored for a long time. Dead sponges rot and destroy the cocoon skin. Therefore, the fungi should be killed and then the dried cocoons should be well preserved. The cocoons received from the suppliers on the basis of the initial processing of the cocoon must be killed within two days from the date of receipt of the cocoons delivered to the processing points on the same day. Brack and cocoon cocoons must be thoroughly dried, even in box-like pots.

In the process of anesthesia and drying of live cocoon, high temperature hot air, which affects it for a long time, negatively affects the technological properties of the cocoon shell and reduces the amount of raw silk output. or modernization, the need for scientific research on improvement.

Results and Discussions: The silk industry in Uzbekistan has an ancient history and centuries-old traditions. Since independence, our country has made structural changes aimed at further deepening economic reforms in the silk industry, launching new and modernizing existing production facilities, creating favorable conditions for attracting foreign investment, expanding the production of competitive finished products on the world market. Favorable natural and climatic conditions in our country allow us to continue the rich cultural and historical heritage in the field of silk production and further develop silkworm breeding in the regions of the republic.

The demand for natural silk in the world market is growing day by day. During the initial processing of cocoons, it is very important to maintain the physical and mechanical properties of the cocoon yarn, as well as the characteristics of living cocoons, and the silk from the cocoon is based on them.

These are the natural silk products that have the highest physical and mechanical properties among natural fibers, provide comfort to the human body and are in demand in world markets.

Improving the overall quality of products is one of the main tasks today. Regardless of the direction in which the products are produced, its quality must meet the requirements of customers, as well as meet world standards. Therefore, one of the main tasks of industrial enterprises today is to constantly adapt the quality of products to modern requirements and world standards.

The quality of natural silk and all its technological features also depend on the breed of silkworm, care agrotechnics, leaf saturation, the quality of the stalk and the initial processing of the cocoon.

Accelerate the development of the fodder base of silkworm breeding, continuous improvement of silkworm care and cocoon production, the widespread introduction of effective methods of production and deep processing of cocoons, raw silk, silk yarn, the production of finished silk products, increase the export potential of the industry and Work is underway to build a single and integrated organizational and technological system that will increase employment and income in rural areas. Planning of silkworm rearing, creation of conditions for revitalization of silkworm eggs, their healthy revitalization and distribution to feeders, establishment and expansion of silkworm feed base, preparation for worm feeding,

organizational and agro-technical assistance to silkworms during silkworm rearing live cocoons are being processed and stored until they are delivered to the factory.

Proper preparation of dry cocoons for spinning ensures the smooth operation of silk spinning mills. It also increases the production capacity of silk spinning machines, increasing the percentage of raw silk output from cocoons.

In order to determine the economic value of raw materials from silk products, the percentage of raw silk output from cocoons per unit of mass is first determined, as well as the percentage of waste from spinning: the ratio of loose and curtain layers is accurately measured.

It is known that the silk industry is well developed in all regions of the country, and natural silk is a valuable commodity, which is in demand in the world market and plays an important role in the national economy.

To date, there are several methods of pre-treatment of cocoons, which can be divided into two groups depending on the technology of implementation of the processes of anesthesia and drying of live cocoons separately or in parallel.

In the first group - live cocoon cocoons are anesthetized only, so the cocoon inanimate cocoons are dried in shaded racks. These include processing methods using steam, chemicals, sealing, gamma rays, and storage in a cold environment.

In the second group - the above processes are equal, that is, the live cocoon is dried with the anesthesia. These include sunlight, vacuum, high-frequency current, high-temperature, and infrared processing.

The process of drying cocoons is not only a complex technological process that seriously affects its natural quality, but also requires a high amount of fuel and energy. One way to save it is to completely dry these fungal anesthetized cocoons not to the conditioned level, but first to the critical state, and then to the conditioned level in the open-air racks. This allows the cocoons to save heat energy and maintain its technological properties by shortening the processing time in high hot weather.

Increasing the volume of production of finished silk products and further improving its quality, mastering its most popular types and design, preparation of industry products in accordance with international requirements are among the most pressing issues.

The life cycle of a silkworm depends on the amount of water, minerals and organic matter it contains in the leaves of a particular species. With this in mind, it is necessary to ensure that the leaf given to the worms does not wither and eat it almost completely.

Conclusion: There are many silkworms in the world that produce natural silk. In our country, natural silk fibers are obtained only from mulberry silkworm cocoons. The quality of natural silk and all its technological features depend not only on the breed of silkworm, care agrotechnics, the quality of the stalk, but also on the type of mulberry leaf, navigation and where it is located on the tree branch.

The most important economic part of the mulberry tree is the leaf, which is the only food for the silkworm. Mulberry leaves contain nutrients that fully meet the needs of silkworms - sugar, protein, fat and water, enzymes and various vitamins. As soon as the silkworms recover from the seeds, they feed on mulberry leaves and eventually wrap the cocoon. Consequently, the more abundant the mulberry leaf, the more worms can be fed and the more cocoons can be grown.

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